REMARKS

Claims 1-34 are pending after amendment, with claims 1, 18, 32 and 33 being independent. Claims 1, 6, 18, 32 and 33 have been amended based on the original disclosure. In light of the foregoing amendment and following remarks, reconsideration and allowance of all pending claims are respectfully requested.

Rejections Under 35 U.S.C. § 103 Based on Murakami, Koyanagi and Qian

Claims 1, 4-7, 10-13, and 32 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over US 20050128291 to Murakami et al. ("Murakami") in view of US 6720987 to Koyanagi et al. ("Koyanagi") and further in view of US 6404900 to Qian et al. ("Qian"). While not agreeing with the rejections, claims 18 and 33 have been amended to obviate the rejections.

As an initial matter, the Office contradicts itself when contending that "Murakami discloses a system, comprising: at least one video camera to capture warped panoramic video images of a scene and to produce a video stream" but conceding that "Murakami does not specifically disclose that the first processing module unwarps warped panoramic video images to produce rectilinear video images of the scene." Murakami does not teach "unwrap[ing] the warped panoramic video images to produce rectilinear video images of the scene" because Murakami does not teach the claimed "at least one video camera to capture warped panoramic video images of a scene and to produce a video stream." In other words, the camera C1 and C2 do not capture the claimed "warped panoramic video images."

In contrast to claim 1, the cameras C1 and C2 in Murakami are described as visible-light integrating camera and infrared camera respectively. Murakami does not describe that C1 and C2 captures the claimed warped panoramic video images. In fact, the term "panoramic video images" is not found anywhere in Murakami. At most, Murakami teaches that "The wait command causes the visible-light integrating camera C1 or infrared camera C2 to zoom back to a predetermined wide-angle position and keep its lens face toward the point at which the object has been lost for the predetermined period" when a moving object is captured by C1 or C2 (see Murakami at ¶ [0051]). However, zooming to a predetermined wide-angle position is not same as the claimed warped panoramic video images. It is well known in the art of image processing

technology that a wide-angle position is irrelevant as to whether panoramic video images are captured. Moreover, the fact Murakami does not describe any processing module for unwarping panoramic video images is telling that Murakami does not capture any panoramic video images.

The addition of Koyanagi fails to cure the deficiencies of Murakami. In contrast to claim 1, Koyanogi describes capturing a panorama picture rather than the claimed panoramic video images (see Koyanogi at FIGS. 4A-13C; 6:65-15:20). While Koyanogi teaches a camera portion 11 that includes a video camera, Koyanogi does not capture the claimed warped panoramic video images. In fact, the Office concedes that "Koyanagi discloses a controller for a photographing apparatus and system, wherein a panoramic image is generated from multiple smaller component images (Koyanagi: Figs. 4A-4F and 5A-5D) and a desired image may be expanded by driving a pan tilter device in response to user input (Koyanagi: column 3, lines 1-11)." (See Office Action at page 3). The Office does not contend that Koyanagi teaches capturing the claimed warped panoramic video images. Moreover, none of the cited portions of Koyanagi (e.g., FIGS. 4A-D and 5AD) teaches or suggests the claimed "unwarp[ing] said warped panoramic video images to produce rectilinear video images of the scene." Rather, Koyanagi describes capturing a panoramic image by taking two adjacent images and mapping them onto a virtual spherical surface to prevent the adjacent images from overlapping (see Koyanagi at FIGS. 4A-D and 5A-D). It is incomprehensible as to how the methods of creating a panorama image in Koyanogi can reasonably be construed as the claimed "unwarp[ing] said warped panoramic video images to produce rectilinear video images of the scene." At nowhere does Koyanagi describes or suggest unwarping warped panoramic video images to obtain rectilinear video images.

The above confusion in the pending rejection may be due to the fact that the Office seems to gloss over the claimed "warped panoramic video images." To provide additional clarity, claim 1 has been amended to recite "wherein the at least one video camera comprises an omni-direction video camera to capture the warped panoramic video images in a full 360-degree view." The omni-direction video camera provides the full 360-degree view so as to allow a user to obtained "customized viewing of the scene **in the produced rectilinear video images**" as recited in claim 1. Clearly Koyanagi does not teach or suggest any of these limitations.

Also, the Office concedes that the combination of Murakami and Koyanagi fails to teach or suggest the claimed "second processing module to detect and track a person's head in the

rectilinear video images and to extract video images in the person's view from the rectilinear video images." However, the addition of Qian fails to cure the deficiencies of Murakami and Koyanagi.

As an initial matter, Qian also fails to teach or suggest the claimed capturing the warped panoramic video images and unwarping the warped panoramic video images to obtain rectilinear video images. In contrast to claim 1, Qian describes "provides a method of using color-based filtering in combination with a motion estimation technique, using a linear Kalman filter, to overcome the previously identified prior-art problems." (See Qian at Abstract and 4:17-21). Also, Qian describes that "The invention further provides an improved method to track a dominant face in the case where more than one face, or other skin-color-like objects, occurs in the scene." (See id. at 4:21-23). However, claim 1 does not recite any general head tracking, such as the dominant face tracking described in Qian. Rather, claim 1 recites "a second processing module to detect and track a person's head in the rectilinear video images and **to extract video images in the person's view from the rectilinear video images.**" Thus, not only does claim 1 recite tracking a head of a person, but claim 1 also recites **extracting video images in the person's view from the rectilinear video images**. The specific video images in the tracked person's view can be obtained in claim 1 because warped panoramic video images that provides full 360 degree view is captured, and rectilinear video images of customized view from the 360 degree view is obtained.

In contrast to claim 1, Qian merely provides the dominant face tracking and is silent as to the claimed **extracting video images in the person's view from the rectilinear video images**. Because the proposed combination of Murakami, Koyanagi and Qian fails to teach or suggest the claimed capturing the warped panoramic video images and unwarping the warped panoramic video images, it is not enough for Qian to teach the dominant face tracking.

For at least these reasons, claim 1 is patentable over the proposed combination of Murakami, Koyanagi and Qian. Claims 1, 4-7, and 10-13 depend from claim 1 and are patentable over the proposed combination of Murakami, Koyanagi and Qian for at least the same reasons.

Claim 32 is patentable over the proposed combination of Murakami, Koyanagi and Qian for at least reasons similar to claim 1.

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Rejections Under 35 U.S.C. § 103 Based on Murakami, Koyanagi and Monroe

   Claims 18-24, 29-31 and 33-34 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Murakami in view of Koyanagi, and further in view of US 6970183 to Monroe ("Monroe"). While not agreeing with the rejections, claims 18 and 33 have been amended to obviate the rejections.

   Claims 18 is patentable over the proposed combination of Murakami and Koyanagi for at least reasons similar to claim 1. The addition of Monroe fails to cure the deficiencies of Murakami and Koyanagi. In fact, Monroe is cited by the Office merely to contend that Monroe teaches "a multimedia surveillance system that which includes filtering whom is contacted regarding an alarm event by on-duty status (Monroe: column 30, lines 41-48) and proximity to the alarm event location (Monroe: column 30, lines 48-54)." (See Office Action at pages 8-9). Regardless of the Office's contention, Monroe fails to teach or suggest at least the claimed at least one video camera to capture the warped panoramic video images and unwarping the warped panoramic video images to obtain the rectilinear video images to allow customized viewing of the scene as recited in claim 18. Moreover, Monroe fails to teach or suggest that the at least one video camera comprises an omni-direction video camera to capture the warped panoramic video images in a full 360-degree view.

   Additionally, while the Office contends that Koyanagi teaches the claimed "unwarping..." limitation, as described with respect to claim 1 above, Koyanagi merely teaches creating a panoramic image from two adjacent images.

   For at least these reasons, claim 18 is patentable over the proposed combination of Murakami, Monroe and Koyanagi. Claims 19-24 and 29-31 depend from claim 18 and are patentable for at least the same reasons.

   Claim 33 is patentable over the proposed combination of Murakami, Koyanagi and Monroe for at least reasons similar to claim 18. Claim 34 depend from claim 33 and is patentable for at least the same reasons.

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Rejections Under 35 U.S.C. § 103 Based on Murakami, Koyanagi, Monroe and Lin

   Claims 2, 8 and 9 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Murakami in view of Koyanagi, further in view of Monroe as applied to claims 1,4-7, 10-13, 18-25, and 28-34 above, and further in view of US 20030058340 to Lin et al. ("Lin"). While not agreeing with the rejections, claim 1 has been amended to obviate the rejections.

   Claims 2 and 8-9 depend from claim 1 and are patentable over the proposed combination of Murakami and Koyanagi for at least reasons similar to claim 1. Also, for reasons similar to claim 18, the addition of Monroe fails to cure the deficiencies of Murakami and Koyanagi. The addition of Lin fails to cure the deficiencies of Murakami, Koyanagi and Monroe. In contrast to claim 1, from which claims 2 and 8-9 depend, Lin describes "automatically learning and identifying events in image data." (See Lin at ¶ [0009] and Abstract). To performing the learning and identifying, Lin describes that "Each event is modeled in the hierarchical HMM with a set of sequential states that describes that paths in a high-dimensional feature space." (See Lin at ¶ [0010]). However, Lin does not teach or describe at least the claimed at least one video camera to capture the warped panoramic video images and unwarping the warped panoramic video images to obtain the rectilinear video images to allow customized viewing of the scene. Moreover, Lin fails to teach or suggest that the at least one video camera comprises an omni-direction video camera to capture the warped panoramic video images in a full 360-degree view.

   For at least these reasons, claims 2 and 8-9 are patentable over the proposed combination of Murakami, Koyanagi, Monroe and Lin.

   Additionally, claims 2 and 8-9 are patentable for additional reasons. For example, the Office contends that Lin teaches foreground-back ground segmentation including head segmentation, and that such segmentation includes identifying edges. Regardless whether the Office's contention is correct or not, the Office appears to ignore the claimed limitation of "ellipse detection to extract possible head images." Moreover, the terms "edge detection" and "ellipse detection" are never used or described in Lin. Thus, the rejection of claim 2 is improper and the teaches of Lin fails to support even the deficient contention of the Office.

   For at least these additional reasons, claim 2 is patentable over the proposed combination.

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Rejections Under 35 U.S.C. § 103 Based on Murakami, Koyanagi, Monroe and Murching

Claims 3, 14-17, 26, and 27 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Murakami in view of Koyanagi and further in view of Monroe as applied to claims 1,4-7,10-13, 18-25, and 28-34 above, and further in view of US 6917692 to Murching et al. ("Murching"). While not agreeing with the rejections, claims 1 and 18 have been amended to obviate the rejections.

As described above, claim 1 is patentable over the proposed combination of Murakami and Koyanagi. As described with respect to claims 2, 8-9 and 18, the addition of Monroe fails to cure the deficiencies of Murakami and Koyanagi. Also, as described above, claim 18 is patentable over the proposed combination of Murakami, Koyanagi and Monroe. Claims 3 and 14-17 depend from claim 1. Also, claims 26-27 depend from claim 18. Thus, for at least reasons similar to claims 1 and 18, claims 3, 14-17, 26, and 27 are patentable over the proposed combination of Murakami, Koyanagi and Monroe for at least the same reasons.

The addition of Murching fails to cure the deficiencies of Murakami, Koyanagi and Monroe. While Murching is cited by the Office for allegedly teaching "Kalman tracking of color objects, wherein objects of interest are identified and their movements are predicted using a Kalman algorithm (Murching: column 1, lines 37-49)," Murching suffers from deficiencies similar to Murakami, Koyanagi and Monroe. Namely, Murching fails to teach or suggest at least the claimed at least one video camera to capture the warped panoramic video images and unwarping the warped panoramic video images to obtain the rectilinear video images to allow customized viewing of the scene. Moreover, Murching fails to teach or suggest that the at least one video camera comprises an omni-direction video camera to capture the warped panoramic video images in a full 360-degree view.

For at least these reasons, claims 3, 14-17, 26, and 27 are patentable over the proposed combination of Murakami, Koyanagi, Monroe and Murching.

Rejections Under 35 U.S.C. § 103 Based on Murakami, Koyanagi, Monroe and Qian

Claims 25 and 28 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Murakami in view of Koyanagi, and further in view of Monroe and further in view of Qian. While not agreeing with the rejections, claim 18 has been amended to obviate the rejections.

Claims 25 and 28 depend from claim 18 and are patentable over the proposed combination of Murakami, Koyanagi and Monroe for at least the same reasons. The addition of Qian fails to cure the deficiencies of Murakami, Koyanagi and Monroe. As described with respect to claim 1 above, Qian is cited by the Office merely to contend that Qian teaches dominant face tracking. However, Qian suffers from deficiencies similar to Murakami, Koyanagi and Monroe. Namely, Qian fails to teach or suggest at least the claimed at least one video camera to capture the warped panoramic video images and unwarping the warped panoramic video images to obtain the rectilinear video images to allow customized viewing of the scene. Moreover, Qian fails to teach or suggest that the at least one video camera comprises an omni-direction video camera to capture the warped panoramic video images in a full 360-degree view.

For at least these reasons, claims 25 and 28 are patentable over the proposed combination of Murakami, Koyanagi, Monroe and Qian.

CONCLUSION

The foregoing comments made with respect to the positions taken by the Examiner are not to be construed as acquiescence with other positions of the Examiner that have not been explicitly contested. Accordingly, the above arguments for patentability of a claim should not be construed as implying that there are not other valid reasons for patentability of that claim or other claims.

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Respectfully submitted,

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